

## STATEMENT OF QUALIFICATIONS

**Richard A. Denton, Ph.D., P.E.**

### EDUCATION

Ph.D., Civil Engineering, 1978, University of Canterbury, New Zealand

B.Eng. (First Class Honours), Civil Engineering, 1972, University of Canterbury, New Zealand

### PROFESSIONAL REGISTRATION

Registered Civil Engineer C47212, California (since 1991)

### CURRENT POSITION

**Water Resources Consultant / Sole Proprietor, Richard Denton & Associates, 2006-present.** Currently consultant to Solano County and Contra Costa County on Bay Delta Conservation Plan, California WaterFix, Ship Channel Deepening, San Luis Drain lawsuit, and other Bay-Delta issues. Previously consultant to Contra Costa Water District on Alternative Intake Project, Los Vaqueros Expansion, Bay Delta Conservation Plan, San Luis Drain lawsuit, Grassland Bypass Project, and other water rights, water quality and water resources issues. Assisted the Bay Institute in development of comments to the State Water Resources Control Board regarding Flow Criteria for the Delta necessary to Protect Public Trust Resources (2010). Prepared a detailed February 2015 Delta Salinity Constituent Analysis report for the State Water Project Contractors Authority.

### PREVIOUS POSITIONS

**Contra Costa Water District, Concord, California** <http://www.ccwater.com/>

1995 - 2006: Water Resources Manager (through August 2006)

1995: Principal Engineer

1994 - 1995: Senior Water Resources Specialist

1992 - 1994: Senior Engineer

1989 - 1992: Water Resources Specialist

Managed CCWD's Water Resources Group. Represented CCWD, California Urban Water Agencies, and Ag/Urban coalition in State Water Resources Control Board, CALFED Bay-Delta program and CVP Improvement Act proceedings related to the San Francisco Bay-Delta. Analyzed and modeled Central Valley operations and flow and salinity regimes in Sacramento-San Joaquin Delta. Modeled the operation of CCWD's Los Vaqueros Reservoir (completed in 1998) and proposed Bay-Delta projects, and participated as an expert witness in subsequent water rights hearings before the State Water Resources Control Board. Participated in development and review of CEQA/NEPA and water right documents. Chair of CALFED Operations and Fish Forum. Served on the CALFED Bay-Delta Advisory Committee water supply subcommittee and

Richard A. Denton Statement of Qualifications  
Page 2

the Association of California Water Agencies water quality committee. Project manager for development of CALFED Delta Region Drinking Water Quality Management Plan completed in June 2005.

**University of California at Berkeley, Berkeley, California**

<http://www.ce.berkeley.edu/index.php>

1982 - 1989: Assistant Professor in Civil Engineering (Hydraulic and Coastal Engineering)

Carried out research in stratified flow, surface water hydrology, hydraulic engineering and mixing processes in rivers, reservoirs and estuaries. Taught graduate and undergraduate courses and supervised graduate research. Director of hydraulic and coastal engineering research laboratory. Consultant to State Water Resources Control Board on currents in San Francisco Bay producing four detailed reports (1984-1986)

**University of Karlsruhe, Karlsruhe, Germany**

1978 - 1981: Research Engineer, Sonderforschungsbereich 80,

Postdoctoral research on stratified flow in reservoirs. Produced a report on density currents in reservoirs and warm water wedges behind skimmer walls.

**New Zealand Oceanographic Institute, Wellington, New Zealand**

1978: Physical Oceanographer,

Analysis of tidal currents in fjords. Participated in marine biology cruise to the N.E. coast of Australia.

**HONORS AND AWARDS**

Bay-Delta Modeling Forum (now California Water and Environmental Modeling Forum)

Hugo B. Fisher Award Recipient, 1995

California Water and Environmental Modeling Forum Career Achievement Award, 2010

**PREVIOUS COMMITTEES AND ADVISORY GROUPS**

Member, Local Organizing Committee for 27th Congress of the International Association for Hydraulic Research, San Francisco, August 1997

Member, ASCE Hydraulics Division Task Committee on Density Currents and Their Applications in Hydraulic Engineering.

Member, Technical Program Committee for the 1993 ASCE Hydraulic Division Conference in San Francisco.

Member, San Francisco Estuary Project (SFEP) Technical Advisory Committee.

Member, SFEP Technical Advisory Committee Workgroup on (Biological and Pollutant) Monitoring.

Member, CALFED Bay-Delta Advisory Committee water supply subcommittee

Member, Association of California Water Agencies water quality committee

Richard A. Denton Statement of Qualifications  
Page 3

Assisted in preparation of Association of California Water Agencies May 2005 Blueprint for California Water, "*No Time to Waste*."

Member, Friends of Water Resources Center Archives Board, UC Berkeley, CA  
Convener, California Bay-Delta Modeling Forum (now called the California Water and Environmental Modeling Forum), 1998

Chair, CALFED Operations and Fish Forum (August 2001 – August 2006)

## **PUBLICATIONS**

"Turbulent convection between two horizontal plates." (with I.R. Wood) International Journal of Heat and Mass Transfer, Vol. 22, pp. 1339-1346, 1979.

"Penetrative convection at low Péclet number." (with Ian R. Wood) Journal of Fluid Mechanics, Vol. 113, pp. 1-21, 1981

"Currents in Suisun Bay." California State Water Resources Control Board, Publication No. 85-3wr, 1985.

"Currents in San Pablo Bay." California State Water Resources Control Board, Publication No. 85-4wr, 1985.

"Hydraulic control over the sill in Observatory Inlet." (with David M. Farmer) Journal of Geophysical Research - Oceans, Vol. 90, No. C5, pp. 9051-9068, 1985.

"Currents in Central San Francisco Bay." California State Water Resources Control Board, Publication No. 86-6wr, 1986.

"Currents in San Francisco Bay - Final Report." (with James R. Hunt) California State Water Resources Control Board, Publication No. 86-7wr, 1986.

"Locating and identifying hydraulic controls for layered flow through an obstruction." Journal of Hydraulic Research, IAHR, Vol. 23, No. 3, pp. 281-229, 1987.

"Energy curves for multi-layer flow through obstructions." Journal of Hydraulic Research, IAHR, Vol. 27, No. 5, pp. 617-635, 1989.

"Classification of unidirectional three-layer flow over a hump." Journal of Hydraulic Research, IAHR, Vol. 28, No. 2, pp. 215-233, 1990.

"Analytical asymptotic solutions for longitudinal dispersion with dead zones." Journal of Hydraulic Research, IAHR, Vol. 28, No. 3, pp. 309-329, 1990.

"Hydraulic control of multi-layered exchange flow through obstructions." In Chapter 3, Stratified Flows, Edited by E.J. List and G.H. Jirka, Published by American Society of Civil Engineers, New York, 1990, pp. 123-132, 1990.

Richard A. Denton Statement of Qualifications  
Page 4

"Accounting for density front energy losses." (Discussion). Journal of Hydraulic Engineering, ASCE, Vol. 116, pp. 270--275, 1990.

"Seasonal influences on the sediment transport characteristics of the Sacramento River, California." (with Peter Goodwin) Technical Note 530, Proceedings of the Institution of Civil Engineers, Great Britain, Part 2, Vol. 91, March 1991, pp. 163-172, 1991.

Closure on Discussion of "Accounting for density front energy losses," by R.A. Denton (1989). Discussion by Wright, Kim and Bühler. Closure appeared in Journal of Hydraulic Engineering, ASCE, Vol. 117, No. 9, pp. 1224-1225, 1991.

"Density currents entering lakes and reservoirs." (with V. Alavian, G.H. Jirka, M.C. Johnson, and H.G. Stefan) Journal of Hydraulic Engineering, ASCE, Vol. 118, No. 11, November 1992, pp. 1464-1489.

"Accounting for Antecedent Conditions in Seawater Intrusion Modeling - Applications for the San Francisco Bay-Delta." Hydraulic Engineering 93, Volume 1, pp. 448-453, Proceedings of ASCE National Conference on Hydraulic Engineering, San Francisco, July 1993.

"Modeling the operation of a water quality reservoir and its effect on the Sacramento-San Joaquin Delta." (with G. Gartrell, and A.W. Nelson) Hydraulic Engineering 93, Volume 1, pp. 623-628, Proceedings of the ASCE 1993 National Conference on Hydraulic Engineering, San Francisco, July 25-30.

"Predicting Water Quality at Municipal Water Intakes - Part 1: Application to the Contra Costa Canal Intake." Hydraulic Engineering 93, Volume 1, pp. 809-814, Proceedings of ASCE National Conference on Hydraulic Engineering, San Francisco, July 1993.

Discussion of "Distribution of suspended sediment over wave-generated ripples." (with Gib Bogle) Journal of Waterways, Port, Coastal and Ocean Engineering, ASCE, pp. 152-153, March/April 1995.

"Understanding the Delta - An engineering perspective." Invited lecture, California Colloquium on Water, University of California at Berkeley, April 10, 2001  
<http://www.lib.berkeley.edu/WRCA/ppt/denton.ppt#5>  
<http://video.google.com/videoplay?docid=-401354079791113074>

"Water Quality Optimization with a Blending Reservoir and Variable Sources" by Elliott Campbell, David Briggs, Richard Denton and Greg Gartrell. Journal of Water Resources Planning and Management, Volume 128, No. 4, pp. 288-302, July/August 2002

"Delta Region Drinking Water Quality Management Plan – Draft Final Report," by Contra Costa Water District, City of Stockton, and Solano County Water Agency. Prepared for CALFED Bay-Delta Program, June 2006 (Project manager).  
<http://www.ccwater.com/publications/index.asp?sec=drwqmp>